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ABSTRACT:

PROBLEM TO BE SOLVED: To provide a system which accesses plural pages and plural different WWW servers based on a unique invisible session ID that is assigned within authentication valid time once a user authenticates a system that links plural WWW servers.

SOLUTION: A host 31 analyzes an HTML document from a browser 22 which is notified from any of plural WWW servers 11, sends an input request for user information to the browser 22 through the WWW server 11 when a session ID is

not added, analyzes the sent user information to generate a unique session ID to a request that is allowed to be registered, sends an HTML document in which the session ID is embedded again to the browser 22 through the WWW server 11 and also manages valid time information to allow authentication within the range of the valid time information.

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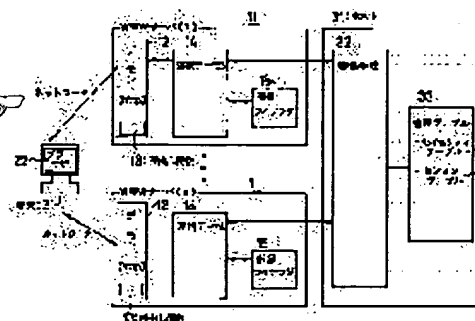
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(54) SYSTEM FOR LINKING PLURAL WWW SERVERS

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a system which accesses plural pages and plural different WWW servers based on a unique invisible session ID that is assigned within authentication valid time once a user authenticates a system that links plural WWW servers.

SOLUTION: A host 31 analyzes an HTML document from a browser 22 which is notified from any of plural WWW servers 11, sends an input request for user information to the browser 22 through the WWW server 11 when a session ID is not added, analyzes the sent user information to generate a unique session ID to a request that is allowed to be registered, sends an HTML document in which the session ID is embedded again to the browser 22 through the WWW server 11 and also manages valid time information to allow authentication within the range of the valid time information.



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TECHNICAL FIELD

[The technical field to which invention belongs] this invention relates to the two or more WWW server cooperation system by which a two or more WWW server cooperates.

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EFFECT OF THE INVENTION

[Effect of the Invention] As explained above, when according to this invention the HTML document from the browser notified from one of two or more WWW servers is analyzed and Session ID is not added. The session ID of a meaning is generated to the demand to which the input request of user information was transmitted to the browser through the WWW server, ~~the transmitted user information was analyzed~~, and registration was permitted. While transmitting the HTML document which Session ID embedded through the WWW server again to a browser Effective-time information is managed, and since the composition which allows authentication at the time of within the limits of effective-time information is adopted, once a user attests, the inside of an authentication effective time can be accessed over two or more pages or two or more different WWW servers based on the invisible session ID of the given meaning. Thus, it became possible to realize session management over two or more WWW servers by the invisible session ID.

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TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] As mentioned above, whenever the conventional authentication accessed the page of a WWW server from the browser, it required user authentication, and the browser inputted information (information on user ID, a password, etc.) required for the authentication, and transmitted, and it had the problem of generating for every required page **** / troublesome operation in which a server attests].

[0005] Moreover, when other WWW servers of the same function were accessed from a browser, naturally, authentication inputted information required for the authentication, and transmitted for every required page, and there was also a problem that a server had to attest.

[0006] In order that this invention may solve these problems, once a user attests, the inside of an authentication effective time aims at realizing the system [access] based on the invisible session ID of the given meaning possible over two or more pages or two or more different WWW servers.

[Translation done.]

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

- [Drawing 1] It is the system configuration view of this invention.
[Drawing 2] It is explanatory drawing of this invention of operation.
[Drawing 3] It is the example of a security table of this invention.
[Drawing 4] It is the example of a session table of this invention.
[Drawing 5] They are ID / example of a password input screen of this invention.
[Drawing 6] They are ID / password authentication flow chart of this invention.
[Drawing 7] It is the judgment flow chart of the authentication range of this invention.
[Drawing 8] It is the example of a URL/html document of this invention.

[Description of Notations]

- 11: WWW server
- 12: Demon (http)
- 13: Calling function
- 14: Cooperation demon
- 15: Part library
- 21: Terminal
- 22: Browser
- 31: Host
- 32: Management tool
- 33: Managed table
- 34: Security table
- 35: Session table

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the two or more WWW server cooperation system by which a two or more WWW server cooperates.

[0002]

[Description of the Prior Art] Conventionally, the session of HTTP (Hyper Text Transfer Protocol) which is the communications protocol of a WWW server is set up when a browser requires a page, and if a server transmits the page, it will be cut. Thus, a session completely turns into another session, when it goes out for every page and the following page (screen) is accessed.

[0003] Therefore, a user's authentication is made to attest a user per page to a required page.

[0004]

[Problem(s) to be Solved by the Invention] As mentioned above, whenever the conventional authentication accessed the page of a WWW server from the browser, it required user authentication, and the browser inputted information (information on user ID, a password, etc.) required for the authentication, and transmitted, and it had the problem of generating for every required page **** / troublesome operation in which a server attests].

[0005] Moreover, when other WWW servers of the same function were accessed from a browser, naturally, authentication inputted information required for the authentication, and transmitted for every required page, and there was also a problem that a server had to attest.

[0006] In order that this invention may solve these problems, once a user attests, the inside of an authentication effective time aims at realizing the system [access] based on the invisible session ID of the given meaning possible over two or more pages or two or more different WWW servers.

[0007]

[Means for Solving the Problem] With reference to drawing 1, a The means for solving a technical problem is explained. ~~transmitting the HTML document which embedded the session ID which embedded the session ID which the WWW server 11 notified the host 31 of the HTML document received from the browser 22 in drawing 1, or received the notice from the host 31 in the HTML document, and received the notice in the browser 22 from transmission or the host 31 to a browser 22 **** -- etc. -- it carries out and consists of a demon 12, a cooperation demon 14, a part library 15, etc.~~

[0008] ~~A demon 12 transmits and receives data through a network between browsers 22, and has the call function 13 etc. here. The call function 13 calls the cooperation demon 14, when a HTML document is received from a browser 22.~~

[0009] notifying a demon 12 of the HTML document which notified the host 21 of the HTML document which the cooperation demon 14 was called from the call function 13, and the demon 12 received, or was notified by the host 31 **** -- the part live rye 14 -- calling -- requesting predetermined processing **** -- etc. -- it carries out

[0010] The part libraries 15 are parts (program) which perform various processings which received the request from the cooperation demon 14. transmitting the HTML document which corresponds when a browser 22 displays on a screen the HTML document which connected with the WWW server 11 through the network, and was received from the WWW server 11 concerned or a document/image is chosen on a screen to the WW server 11 **** -- etc. -- it carries out

[0011] a host 31 performing various processings based on the HTML document notified by the cooperation demon 14 who constitutes the WWW server 11, or transmitting data to a browser 22 by cooperation demon 14 course **** -- etc. -- it carries out

[0012] Next, operation is explained. A host 31 is notified of the HTML document which the WWW server 11 received from the browser 22. The HTML document from a browser 22 with which the host 31 was notified is analyzed. When Session ID is not added, ~~the input request of user information is transmitted to a browser 22 through the WWW server 11. While transmitting the HTML document which generated the session ID of a meaning to the demand to which the transmitted user information was analyzed and registration was permitted, and Session ID embedded through the WWW server 11 again to a browser 22~~ Effective-time information is managed and it is made to allow authentication at the time of within the limits of effective-time information.

[0013] Under the present circumstances, when embedding Session ID in a HTML document, Session ID is embedded in a HTML document so that it may not display on URL, and it is made to make Session ID into invisibility.

[0014] Moreover, the call function 13 which calls the cooperation demon 14 into the demon 12 who transmits and receives a HTML document etc. between browsers 22 is formed in the WWW server 11. A host 31 is notified of the HTML document

which the cooperation demon 14 called from the call function 13 received from the browser 22. It is made to transmit the HTML document which embedded the session ID which received the notice from the host 31 in the HTML document, and embedded the session ID which received the notice from transmission or the host 31 through the demon 12 at MOBURAUA 22 to a browser 22 through a demon 12.

[0015] Moreover, the ***** library 15 which performs processing which received the request from the cooperation demon 14 is established in the WWW server 11, and it is made to request various processings from it to the part library 15 concerned.

[0016] Moreover, as effective-time information, a host 31 matches with user information, sets up an authentication effective time, and is made to judge the effectiveness of Session ID. Moreover, the existence of authentication is set up for every HTML document on the WWW server 11, and it calls only at the time of ***** , and is made for a function 13 to call the cooperation demon 14.

[0017] Therefore, once a user attests, the inside of an authentication effective time will become possible [accessing over two or more pages or two or more different WWW servers 11 based on the invisible session ID of the given meaning].

[0018]

[Embodiments of the Invention] Next, the gestalt of operation of this invention and operation are explained to a detail one by one using drawing 8 from drawing 1 .

[0019] Drawing 1 shows the system configuration view of this invention. In drawing 1 , the WWW server 11 notifies a host 31 of the HTML document received through the network from the browser 22, or It is what is carried out. the HTML document which embedded the session ID which embedded the session ID which received the notice from the host 31 in the HTML document, and received the notice in the browser 22 from transmission or the host 31 through the network -- a network -- minding -- transmitting to a browser 22 **** -- etc. -- It consists of a demon 12, a cooperation demon 14, a part library 15, etc. This WWW server 11 performs processing indicated to be a WWW server in drawing 2 mentioned later, for example. Here, a HTML document is a document it was described in the HTML language that displayed a document and an image, and there are URL (address) and header information (information used by the HTTP protocol) on the screen of a browser elsewhere.

[0020] Delivering [a demon (http) 12] and receiving data (URL, htmlL document, etc.) between browsers 22 through a network using a HTTP protocol, he has the call function 13 etc. here.

[0021] The call function 13 calls the cooperation demon 14, when a HTML document is received from a browser 22. notifying a demon 12 of the HTML document which notified the host 21 of the HTML document which the cooperation demon 14 was called from the call function 13, and the demon 12 received, or was notified by the host 31 **** -- the part live rye 14 -- calling -- requesting predetermined processing **** -- etc. -- it carries out and processing indicated to be a cooperation demon in drawing 2 mentioned later is performed

[0022] The part library 15 performs processing indicated to be parts in drawing 2 which is the parts which perform various processings which received the request from the cooperation demon 14, for example, is mentioned later. It connects with the WWW server 11 through a network, and a terminal 21 delivers and receives data using a HTTP protocol, and consists of browsers 22 etc. here.

[0023] transmitting the HTML document which corresponds when a browser 22 displays on a screen the HTML document which connected with the WWW server 11 through the network, and was received from the WWW server 11 concerned or a document/image is chosen on a screen to the WWW server 11 **** -- etc. -- it carries out and is a browser (program whose display etc. carries out a HTML document) with a general-purpose network escape (product name) etc.

[0024] a host 31 performing various processings based on the HTML document notified by the cooperation demon 14 who constitutes the WWW server 11, or transmitting data to a browser 22 by cooperation demon 14 course **** -- etc. -- it carries out, and it consists of a management tool 32, a managed table 33, etc. here, and various processings indicated to be the hosts of drawing 2 mentioned later are performed

[0025] a management tool 31 -- the managed table 32 -- referring to -- turning data to a browser 22 and transmitting at the time of the authentication [**** / attest] O.K., **** -- etc. -- it carries out The managed table 32 is a table which registers and manages various management information, and consists of security session tables 34 and 35 etc. here.

[0026] The security table 34 manages the security information of a HTML document, and manages information as shown in drawing 3 mentioned later. The session table 35 manages the authentication effective time of Session ID, and manages information as shown in drawing 4 mentioned later, for example here.

[0027] Next, according to the turn shown in drawing 2 , operation of the composition of drawing 1 is explained in detail.

Drawing 2 shows explanatory drawing of this invention of operation. Here, a browser, a WWW server, and a host are equivalent to the browser 22 of drawing 1 , the WWW server 11, and a host 31, respectively.

[0028] In drawing 2 , S1 specifies URL to refer to. This transmits the URL concerned to the WWW server 11 corresponding to specification of URL (address) which a browser 22 refers to.

[0029] As for S2, the WWW server 11 receives URL (it receives). S3 analyzes URL. S4 is distinguished in a plug-in function designator as a result of the analysis of URL of S3. In YES, processing of the following concerning this invention is performed, and it calls to it by S7, and a function 13 calls the cooperation demon 14, performs delivery by the permanent residence demon (cooperation demon) by S8, notifies a host 31 of an authentication demand by S9, and progresses to S10. On the other hand, since it proved that there was no call of a plug-in function in NO of S4, a html document is sent out by S5 and a browser 22 displays a html document on a screen by S8.

[0030] By the above S1 or S9, URL which a browser 22 refers to is transmitted to the WWW server 11. The demon (http) 12 of the WWW server 11 receives URL, and it distinguishes whether a plug-in function call is required. In YES, the cooperation

demon 14 is called (when required), and it becomes possible to notify a host 31 of an authentication demand. It enables a browser 22 to transmit the html document corresponding to URL as usual at a browser 22 in NO (when not required), and to display a html document on a screen on the other hand.

[0031] As for S10, a host 31 receives the authentication demand from the cooperation demon 14. S11 analyzes URL. It judges that it is URL [need / to be attested / S12]. This is judged with reference to the security table 34 of drawing 2 mentioned later about whether it is that for which the html document specified by URL needs authentication. When authentication is required, it progresses to S15. On the other hand, when authentication is unnecessary, it displays on a screen about the html document which transmitted the html document to the browser 22 through the WWW server 11 by S13, and the browser 22 received by S14.

[0032] Since S15 proved that authentication was required by S12, it performs ejection of the authentication range of specified URL. S16 distinguishes whether Session ID is added. This distinguishes whether Session ID is added to the authentication range of URL which received from the browser 22 by S15 (it distinguishes whether Session ID is already added before). Since it proved that Session ID was already set by S17 or 37 before in YES, it progresses to S41. On the other hand, in NO, since it proved that Session ID was not set (addition), Session ID is added by S17 or S32.

[0033] Since S17 proved that Session ID was not added by S16, it notifies the sending-out demand of ID and a password screen (java) to the WWW server 11. The cooperation demon 14 of the WWW server 11 receives S18.

[0034] As for S19, the parts in the S part library 15 send out ID and html for a password input (java, html) from the cooperation demon 14 who received by 18. S20 displays html (java) for a password input sent out by S19 on a browser 22.

[0035] the screen top for a password input where S21 was displayed by S20 -- ID -- a password input is carried out For example, a user inputs user ID and a password on the password / ID input screen of drawing 5 mentioned later, and the depression of the START button is carried out.

[0036] S22 enciphers ID and a password (java) and transmits to the WWW server 11. S23 sends out receipt information (re-encryption). This receives ID to which 11 was transmitted by the WWW server S22, and the information which carried out the password encryption, re-enciphers this information, and transmits to a host 11.

[0037] By the host S23, S24 receives the information to which 31 was transmitted, and ** and decrypts it. S25 takes out ID and the password which were decrypted by S24. S26 performs reference of ID and a password. This searches ID for example, in the session table 35 of drawing 4 mentioned later (user ID, password), and distinguishes whether there is any match. In O.K., it progresses S29. Error message html which in the case of NG pointed to the WWW server 11 and transmitted html for error messages by S27 since it was proved that they are ID in agreement and the ** error into which the password is not registered, and the browser 22 received by S28 performs an error message on a screen.

[0038] Since it proved that S29 searched ID and a password with S26, and had a match, the authentication range is judged further. This judges the authentication range for every user ID besides illustration, and distinguishes whether authentication authority is given by the user ID concerned. In O.K., it progresses S30. Since it proved that authentication authority was not given to user ID in the case of NG, html for error messages is sent out by S27, and a browser 22 displays error message html on a screen by S28.

[0039] Since authentication authority proved S30 to be a dovetail by O.K. of S29, it sets Session ID. The session ID of the meaning which consists of a date time second ms of the present time is set to the column to which the session ID in the session table 35 of drawing 4 corresponds, and Session ID memorizes it, as it is ID of a meaning, for example, is shown in drawing 4 mentioned later.

[0040] S31 sets authentication guarantee time. This takes out the authentication effective time of the session table 35 of drawing 4 mentioned later, adds it to the present time, and is set to the column of the authentication expiration time of drawing 4 concerned in quest of authentication expiration time.

[0041] S32 sends out Session ID. S33 receives the session ID to which 14 was sent out by the cooperation demon S32 of the WWW server 11.

[0042] S34 adds Session ID to URL parts were specified to be. This adds Session ID to URL (a) of drawing 8 mentioned later, for example was specified to be, and generates URL of (b) of drawing 8 (session ID addition).

[0043] S35 carries out the reorganization collection of the addition URL to URL of fixation. This as URL of fixation about URL of (b) of drawing 8 which added Session ID by S34 (session ID addition) It adds like illustration of data, generation, i.e., fixation by the system, of URL of (c) of drawing 8 (cgi addition). Even if it embeds the right original session ID into a html document and URL (cgi addition) is displayed clearly, as SENSISON ID is not displayed, it is made not visible to others (it is made invisibility).

[0044] S36 sends out a html document. A browser 22 displays on a screen the html document with which S37 was sent out by S36. Under the present circumstances, although URL (cgi) is displayed, the session ID right only in cgi (for example, xxxx.cgi) of fixation being displayed on the URL concerned by the system considers as invisibility, and it is made to embed it into a html document. And it returns and repeats to S1.

[0045] Moreover, since S41 proved that Session ID was added by S16, it searches Session ID. This distinguishes whether it registers with the session table 35 of drawing 4 about Session ID. In O.K., it progresses S42. Since it proved that Session ID was not registered into the session table 35, in the case of NG, processing after S17 mentioned already is performed, and re-registration of Session ID is carried out to it.

[0046] S42 is distinguished in the inside of the scope of Session ID. This has the present time within the authentication expiration time in the entry of the session ID which corresponds with reference to the session table 35 of drawing 4 mentioned later, and distinguishes whether the session ID concerned is effective. In O.K., processing after S33 mentioned already is

performed. Although Session ID was registered into the session table 35, since it proved that it was not effective-time within the limits, in the case of NG, processing after S17 mentioned already is performed, and re-registration of Session ID is carried out to it.

[0047] By the above, perform URL analysis, and when authentication is required URL When Session ID is not added, ID and a password input screen are transmitted and displayed on a browser 22. When ID and the password which were inputted are right, the session ID of a meaning is added. On the other hand, when Session ID is added and the session ID concerned is effective-time within the limits, add Session ID to invisibility into a html document, and it transmits to a browser 22. Moreover, by transmitting and displaying ID and a password input screen on a browser 22, when it is not effective-time within the limits, even if Session ID is added, and re-adding the session ID of a meaning, when ID and the password which were inputted are right Based on the session ID embedded into the html document at invisibility, it enables a browser 22 and a host 31 to transmit and receive via the arbitrary WWW servers 11 about effective-time within the limits. It explains to a detail one by one below.

[0048] Drawing 3 shows the example of a security table of this invention. This matches and registers SOP, TYPE, and URL. Here, SOP expresses -001:SABIBISU classification like illustration, expresses 'PUB:public presentation, and expresses -BAS:foundations.

[0049] Moreover, TYPE expresses -00:authentication (charge) like illustration.

**01: Express authentication (no charge).

[0050]

- BS : express foundations.

- PUB : express public presentation.

Moreover, URL connects a directory and a html document like illustration.

[0051] As mentioned above, the security decided by SOP and TYPE for every html document is registered, and it is made to manage on the security table 34. Drawing 4 shows the example of a session table of this invention. This session table 35 is matched with user ID and a password like illustration. An authentication effective time, Patrol time and timer-supervision time are registered beforehand. When a host 31 actually receives URL to be attested first from a browser 22 It is alike and the session ID of a meaning (the session ID of the meaning decided by the date time second ms of the present time like illustration) is added. It sets to the column of the session ID of the session table 35 concerned, and the authentication expiration time which added and found the authentication effective time at registration and the present time is set to the column of the authentication expiration time of the session table 35 concerned. and -- until it embeds Session ID in a html document at invisibility, it delivers and receives via the arbitrary WWW servers 11 between a host 31 and a browser 22 and it passes authentication expiration time -- Session ID -- as an effective thing -- treating -- that a host 31 transmits data to a browser 22 **** -- etc. -- it is made to carry out

[0052] Moreover, it is the time interval which patrols whether the patrol time in the session table 35 passes the authentication expiration time in the entry in the session table 35 concerned, and has an unnecessary thing, and an invalid thing is for deleting and cutting down memory space. Moreover, timer-supervision time sets up time to supervise various timers.

[0053] In addition, ID in the session table 35 and a password are the copies of user ID and a password registered into the master DB which registered user ID and the password off-line besides illustration.

[0054] Drawing 5 shows ID / example of a password input screen of this invention. This is the example of an input screen of ID/password displayed on the screen of a browser 22 by S20 of drawing 2 mentioned already, and displays like illustration the field which inputs user ID and a password. If it inputs into the input area of these user ID and a password and the depression of the START button is carried out, it enciphers by S22 of drawing 2 mentioned already, and sends out to the WWW server 11.

[0055] Drawing 6 shows ID / password authentication flow chart of this invention. In drawing 6, S51 distinguishes whether ID/password is registered to Master DB. In YES, it distinguishes from Authentication O.K. by S52. Since it proved that it was not that ID and the password of which the host 31 was notified via the WWW server 11 inputted on ID / password input screen of drawing 5 are registered into Master DB in NO, it is decided by S53 that it will be Authentication NG.

[0056] Drawing 7 shows the judgment flow chart of the authentication range of this invention. This is a flow chart which judges the authentication range based on TYPE registered into the security table 34 of drawing 3 mentioned already.

[0057] In drawing 7, S61 distinguishes either of the values (00, 01, BS, PUB) of the column of TYPE of the security table 34 of drawing 3 specified by URL. S62 judges authentication O.K. / authentication NG with the value (00, 01, BS, PUB) of the column of TYPE, respectively.

[0058] - In the case of TYPE=00, it distinguishes in charged service ***** by S63, is judged with Authentication O.K. by S64 at the time of YES, and is judged with Authentication NG by S65 at the time of NO.

[0059] - In the case of TYPE=01, it distinguishes in free service ***** by S66, is judged with Authentication O.K. by S67 at the time of YES, and is judged with Authentication NG by S68 at the time of NO.

[0060] - In TYPE=BS, it is judged with Authentication O.K. by S69.

- In TYPE=PUB, it is judged with Authentication O.K. by S70.

Drawing 8 shows the example of a URL/html document of this invention.

[0061] (a) of drawing 8 shows the example of URL. Here, in URL, a <http://www.fujitsu.co.jp/html> document embeds -HREF:URL data of illustration into the html document concerned.

[0062] (b) of drawing 8 shows the example of URL (session ID addition). Here, URL (session ID addition) is that (what was embedded at invisibility) to which the <http://www.fujitsu.co.jp?EN&yymmddhhmmssxxxhtml> document embedded -HREF:URL (session ID) data of illustration into the html document concerned. Since it will be displayed clearly that this URL (session ID addition) is sent out to a browser 22 as it is and Session ID can be seen, with this, there is no delivery in a browser

22.

[0063] (c) of drawing 8 shows the example of URL (cgi addition). Here, URL (cgi addition) is that (what was embedded at invisibility) to which the <http://www.fujitsu.co.jp/xxxx.cgihtml> document embedded -HREF:URL (session ID) data of illustration into the html document concerned. Even if it sends out this URL (cgi addition) to a browser 22, it is " clearly... It becomes possible not to display [that xxxx.cgi" is only displayed and] Session ID "yymmddhhmmssxxx" clearly, and to hold secretly.

[0064]

[Effect of the Invention] As explained above, according to this invention, the HTML document from the browser notified from one of two or more WWW servers is analyzed. When Session ID is not added, the input request of user information is transmitted to a browser through a WWW server. While transmitting the HTML document which generated the session ID of a meaning to the demand to which the transmitted user information was analyzed and registration was permitted, and Session ID embedded through the WWW server again to a browser Effective-time information is managed, and since the composition which allows authentication at the time of within the limits of effective-time information is adopted, once a user attests, the inside of an authentication effective time can be accessed over two or more pages or two or more different WWW servers based on the invisible session ID of the given meaning. Thus, it became possible to realize session management over two or more WWW servers by the invisible session ID.

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MEANS

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[0008] A demon 12 transmits and receives data through a network between browsers 22, and has the call function 13 etc. here. The call function 13 calls the cooperation demon 14, when a HTML document is received from a browser 22.

[0009] notifying a demon 12 of the HTML document which notified the host 21 of the HTML document which the cooperation demon 14 was called from the call function 13, and the demon 12 received, or was notified by the host 31 **** -- the part live rye 14 -- calling -- requesting predetermined processing **** -- etc. -- it carries out

[0010] The part libraries 15 are parts (program) which perform various processings which received the request from the cooperation demon 14. transmitting the HTML document which corresponds when a browser 22 displays on a screen the HTML document which connected with the WWW server 11 through the network, and was received from the WWW server 11 concerned or a document/image is chosen on a screen to the WW server 11 **** -- etc. -- it carries out

[0011] a host 31 performing various processings based on the HTML document notified by the cooperation demon 14 who constitutes the WWW server 11, or transmitting data to a browser 22 by cooperation demon 14 course **** -- etc. -- it carries out

[0012] Next, operation is explained. A host 31 is notified of the HTML document which the WWW server 11 received from the browser 22. The HTML document from a browser 22 with which the host 31 was notified is analyzed. When Session ID is not added, the input request of user information is transmitted to a browser 22 through the WWW server 11. While transmitting the HTML document which generated the session ID of a meaning to the demand to which the transmitted user information was analyzed and registration was permitted, and Session ID embedded through the WWW server 11 again to a browser 22. Effective-time information is managed and it is made to allow authentication at the time of within the limits of effective-time information.

[0013] Under the present circumstances, when embedding Session ID in a HTML document, Session ID is embedded in a HTML document so that it may not display on URL, and it is made to make Session ID into invisibility.

[0014] Moreover, the call function 13 which calls the cooperation demon 14 into the demon 12 who transmits and receives a HTML document etc. between browsers 22 is formed in the WWW server 11. A host 31 is notified of the HTML document which the cooperation demon 14 called from the call function 13 received from the browser 22. It is made to transmit the HTML document which embedded the session ID which received the notice from the host 31 in the HTML document, and embedded the session ID which received the notice from transmission or the host 31 through the demon 12 at MOBURAUA 22 to a browser 22 through a demon 12.

[0015] Moreover, the ***** library 15 which performs processing which received the request from the cooperation demon 14 is established in the WWW server 11, and it is made to request various processings from it to the part library 15 concerned.

[0016] Moreover, as effective-time information, a host 31 matches with user information, sets up an authentication effective time, and is made to judge the effectiveness of Session ID. Moreover, the existence of authentication is set up for every HTML document on the WWW server 11, and it calls only at the time of *****, and is made for a function 13 to call the cooperation demon 14.

[0017] Therefore, once a user attests, the inside of an authentication effective time will become possible [accessing over two or more pages or two or more different WWW servers 11 based on the invisible session ID of the given meaning].

[0018]

[Embodiments of the Invention] Next, the gestalt of operation of this invention and operation are explained to a detail one by one using drawing 8 from drawing 1.

[0019] Drawing 1 shows the system configuration view of this invention. In drawing 1, the WWW server 11 notifies a host 31 of the HTML document received through the network from the browser 22, or It is what is carried out. the HTML document which embedded the session ID which embedded the session ID which received the notice from the host 31 in the HTML document, and received the notice in the browser 22 from transmission or the host 31 through the network -- a network -- minding -- transmitting to a browser 22 **** -- etc. -- It consists of a demon 12, a cooperation demon 14, a part library 15, etc. This WWW server 11 performs processing indicated to be a WWW server in drawing 2 mentioned later, for example. Here, a HTML

document is a document it was described in the HTML language that displayed a document and an image, and there are URL (address) and header information (information used by the HTTP protocol) on the screen of a browser elsewhere.

[0020] Delivering [a demon (http) 12] and receiving data (URL, html document, etc.) between browsers 22 through a network using a HTTP protocol, he has the call function 13 etc. here.

[0021] The call function 13 calls the cooperation demon 14, when a HTML document is received from a browser 22, notifying a demon 12 of the HTML document which notified the host 21 of the HTML document which the cooperation demon 14 was called from the call function 13, and the demon 12 received, or was notified by the host 31 **** -- the part live rye 14 -- calling -- requesting predetermined processing **** -- etc. -- it carries out and processing indicated to be a cooperation demon in drawing 2 mentioned later is performed

[0022] The part library 15 performs processing indicated to be parts in drawing 2 which is the parts which perform various processings which received the request from the cooperation demon 14, for example, is mentioned later. It connects with the WWW server 11 through a network, and a terminal 21 delivers and receives data using a HTTP protocol, and consists of browsers 22 etc. here.

[0023] transmitting the HTML document which corresponds when a browser 22 displays on a screen the HTML document which connected with the WWW server 11 through the network, and was received from the WWW server 11 concerned or a document/image is chosen on a screen to the WWW server 11 **** -- etc. -- it carries out and is a browser (program whose display etc. carries out a HTML document) with a general-purpose network escape (product name) etc.

[0024] a host 31 performing various processings based on the HTML document notified by the cooperation demon 14 who constitutes the WWW server 11, or transmitting data to a browser 22 by cooperation demon 14 course **** -- etc. -- it carries out, and it consists of a management tool 32, a managed table 33, etc. here, and various processings indicated to be the hosts of drawing 2 mentioned later are performed

[0025] a management tool 31 -- the managed table 32 -- referring to -- turning data to a browser 22 and transmitting at the time of the authentication [**** / attest] O.K., **** -- etc. -- it carries out The managed table 32 is a table which registers and manages various management information, and consists of security session tables 34 and 35 etc. here.

[0026] The security table 34 manages the security information of a HTML document, and manages information as shown in drawing 3 mentioned later. The session table 35 manages the authentication effective time of Session ID, and manages information as shown in drawing 4 mentioned later, for example here.

[0027] Next, according to the turn shown in drawing 2, operation of the composition of drawing 1 is explained in detail. Drawing 2 shows explanatory drawing of this invention of operation. Here, a browser, a WWW server, and a host are equivalent to the browser 22 of drawing 1, the WWW server 11, and a host 31, respectively.

[0028] In drawing 2, S1 specifies URL to refer to. This transmits the URL concerned to the WWW server 11 corresponding to specification of URL (address) which a browser 22 refers to.

[0029] As for S2, the WWW server 11 receives URL (it receives). S3 analyzes URL. S4 is distinguished in a plug-in function designator as a result of the analysis of URL of S3. In YES, processing of the following concerning this invention is performed, and it calls to it by S7, and a function 13 calls the cooperation demon 14, performs delivery by the permanent residence demon (cooperation demon) by S8, notifies a host 31 of an authentication demand by S9, and progresses to S10. On the other hand, since it proved that there was no call of a plug-in function in NO of S4, a html document is sent out by S5 and a browser 22 displays a html document on a screen by S8.

[0030] By the above S1 or S9, URL which a browser 22 refers to is transmitted to the WWW server 11. The demon (http) 12 of the WWW server 11 receives URL, and it distinguishes whether a plug-in function call is required. In YES, the cooperation demon 14 is called (when required), and it becomes possible to notify a host 31 of an authentication demand. It enables a browser 22 to transmit the html document corresponding to URL as usual at a browser 22 in NO (when not required), and to display a html document on a screen on the other hand.

[0031] As for S10, a host 31 receives the authentication demand from the cooperation demon 14. S11 analyzes URL. It judges that it is URL [need / to be attested / S12]. This is judged with reference to the security table 34 of drawing 2 mentioned later about whether it is that for which the html document specified by URL needs authentication. When authentication is required, it progresses to S15. On the other hand, when authentication is unnecessary, it displays on a screen about the html document which transmitted the html document to the browser 22 through the WWW server 11 by S13, and the browser 22 received by S14.

[0032] Since S15 proved that authentication was required by S12, it performs ejection of the authentication range of specified URL. S16 distinguishes whether Session ID is added. This distinguishes whether Session ID is added to the authentication range of URL which received from the browser 22 by S15 (it distinguishes whether Session ID is already added before). Since it proved that Session ID was already set by S17 or 37 before in YES, it progresses to S41. On the other hand, in NO, since it proved that Session ID was not set (addition), Session ID is added by S17 or S32.

[0033] Since S17 proved that Session ID was not added by S16, it notifies the sending-out demand of ID and a password screen (java) to the WWW server 11. The cooperation demon 14 of the WWW server 11 receives S18.

[0034] As for S19, the parts in the S part library 15 send out ID and html for a password input (java, html) from the cooperation demon 14 who received by 18. S20 displays html (java) for a password input sent out by S19 on a browser 22.

[0035] the screen top for a password input where S21 was displayed by S20 -- ID -- a password input is carried out For example, a user inputs user ID and a password on the password / ID input screen of drawing 5 mentioned later, and the depression of the START button is carried out.

[0036] S22 enciphers ID and a password (java) and transmits to the WWW server 11. S23 sends out receipt information

(re-encryption). This receives ID to which 11 was transmitted by the WWW server S22, and the information which carried out the password encryption, re-enciphers this information, and transmits to a host 11.

[0037] By the host S23, S24 receives the information to which 31 was transmitted, and ** and decrypts it. S25 takes out ID and the password which were decrypted by S24. S26 performs reference of ID and a password. This searches ID for example, in the session table 35 of drawing 4 mentioned later (user ID, password), and distinguishes whether there is any match. In O.K., it progresses S29. Error message html which in the case of NG pointed to the WWW server 11 and transmitted html for error messages by S27 since it was proved that they are ID in agreement and the ** error into which the password is not registered, and the browser 22 received by S28 performs an error message on a screen.

[0038] Since it proved that S29 searched ID and a password with S26, and had a match, the authentication range is judged further. This judges the authentication range for every user ID besides illustration, and distinguishes whether authentication authority is given by the user ID concerned. In O.K., it progresses S30. Since it proved that authentication authority was not given to user ID in the case of NG, html for error messages is sent out by S27, and a browser 22 displays error message html on a screen by S28.

[0039] Since authentication authority proved S30 to be a dovetail by O.K. of S29, it sets Session ID. The session ID of the meaning which consists of a date time second ms of the present time is set to the column to which the session ID in the session table 35 of drawing 4 corresponds, and Session ID memorizes it, as it is ID of a meaning, for example, is shown in drawing 4 mentioned later.

[0040] S31 sets authentication guarantee time. This takes out the authentication effective time of the session table 35 of drawing 4 mentioned later, adds it to the present time, and is set to the column of the authentication expiration time of drawing 4 concerned in quest of authentication expiration time.

[0041] S32 sends out Session ID. S33 receives the session ID to which 14 was sent out by the cooperation demon S32 of the WWW server 11.

[0042] S34 adds Session ID to URL parts were specified to be. This adds Session ID to URL (a) of drawing 8 mentioned later, for example was specified to be, and generates URL of (b) of drawing 8 (session ID addition).

[0043] S35 carries out the reorganization collection of the addition URL to URL of fixation. This as URL of fixation about URL of (b) of drawing 8 which added Session ID by S34 (session ID addition) It adds like illustration of data, generation, i.e., fixation by the system, of URL of (c) of drawing 8 (cgi addition). Even if it embeds the right original session ID into a html document and URL (cgi addition) is displayed clearly, as SENSHPN ID is not displayed, it is made not visible to others (it is made invisibility).

[0044] S36 sends out a html document. A browser 22 displays on a screen the html document with which S37 was sent out by S36. Under the present circumstances, although URL (cgi) is displayed, the session ID right only in cgi (for example, xxxx.cgi) of fixation being displayed on the URL concerned by the system considers as invisibility, and it is made to embed it into a html document. And it returns and repeats to S1.

[0045] Moreover, since S41 proved that Session ID was added by S16, it searches Session ID. This distinguishes whether it registers with the session table 35 of drawing 4 about Session ID. In O.K., it progresses S42. Since it proved that Session ID was not registered into the session table 35, in the case of NG, processing after S17 mentioned already is performed, and re-registration of Session ID is carried out to it.

[0046] S42 is distinguished in the inside of the scope of Session ID. This has the present time within the authentication expiration time in the entry of the session ID which corresponds with reference to the session table 35 of drawing 4 mentioned later, and distinguishes whether the session ID concerned is effective. In O.K., processing after S33 mentioned already is performed. Although Session ID was registered into the session table 35, since it proved that it was not effective-time within the limits, in the case of NG, processing after S17 mentioned already is performed, and re-registration of Session ID is carried out to it.

[0047] By the above, perform URL analysis, and when authentication is required URL When Session ID is not added; ID and a password input screen are transmitted and displayed on a browser 22. When ID and the password which were inputted are right, the session ID of a meaning is added. On the other hand, when Session ID is added and the session ID concerned is effective-time within the limits, add Session ID to invisibility into a html document, and it transmits to a browser 22. Moreover, by transmitting and displaying ID and a password input screen on a browser 22, when it is not effective-time within the limits, even if Session ID is added, and re-adding the session ID of a meaning, when ID and the password which were inputted are right Based on the session ID embedded into the html document at invisibility, it enables a browser 22 and a host 31 to transmit and receive via the arbitrary WWW servers 11 about effective-time within the limits. It explains to a detail one by one below.

[0048] Drawing 3 shows the example of a security table of this invention. This matches and registers SOP, TYPE, and URL. Here, SOP expresses -001:SABIBISU classification like illustration, expresses 'PUB:public presentation, and expresses -BAS:foundations.

[0049] Moreover, TYPE expresses -00:authentication (charge) like illustration.

**01: Express authentication (no charge).

[0050]

- BS : express foundations.

- PUB : express public presentation.

Moreover, URL connects a directory and a html document like illustration.

[0051] As mentioned above, the security decided by SOP and TYPE for every html document is registered, and it is made to

manage on the security table 34. Drawing 4 shows the example of a session table of this invention. This session table 35 is matched with user ID and a password like illustration. An authentication effective time, Patrol time and timer-supervision time are registered beforehand. When a host 31 actually receives URL to be attested first from a browser 22 It is alike and the session ID of a meaning (the session ID of the meaning decided by the date time second ms of the present time like illustration) is added. It sets to the column of the session ID of the session table 35 concerned, and the authentication expiration time which added and found the authentication effective time at registration and the present time is set to the column of the authentication expiration time of the session table 35 concerned. and -- until it embeds Session ID in a html document at invisibility, it delivers and receives via the arbitrary WWW servers 11 between a host 31 and a browser 22 and it passes authentication expiration time -- Session ID -- as an effective thing -- treating -- that a host 31 transmits data to a browser 22 **** -- etc. -- it is made to carry out [0052] Moreover, it is the time interval which patrols whether the patrol time in the session table 35 passes the authentication expiration time in the entry in the session table 35 concerned, and has an unnecessary thing, and an invalid thing is for deleting and cutting down memory space. Moreover, timer-supervision time sets up time to supervise various timers. [0053] In addition, ID in the session table 35 and a password are the copies of user ID and a password registered into the master DB which registered user ID and the password off-line besides illustration.

[0054] Drawing 5 shows ID / example of a password input screen of this invention. This is the example of an input screen of ID/password displayed on the screen of a browser 22 by S20 of drawing 2 mentioned already, and displays like illustration the field which inputs user ID and a password. If it inputs into the input area of these user ID and a password and the depression of the START button is carried out, it enciphers by S22 of drawing 2 mentioned already, and sends out to the WWW server 11.

[0055] Drawing 6 shows ID / password authentication flow chart of this invention. In drawing 6, S51 distinguishes whether ID/password is registered to Master DB. In YES, it distinguishes from Authentication O.K. by S52. Since it proved that it was not that ID and the password of which the host 31 was notified via the WWW server 11 inputted on ID / password input screen of drawing 5 are registered into Master DB in NO, it is decided by S53 that it will be Authentication NG.

[0056] Drawing 7 shows the judgment flow chart of the authentication range of this invention. This is a flow chart which judges the authentication range based on TYPE registered into the security table 34 of drawing 3 mentioned already.

[0057] In drawing 7, S61 distinguishes either of the values (00, 01, BS, PUB) of the column of TYPE of the security table 34 of drawing 3 specified by URL. S62 judges authentication O.K. / authentication NG with the value (00, 01, BS, PUB) of the column of TYPE, respectively.

[0058] - In the case of TYPE=00, it distinguishes in charged service ***** by S63, is judged with Authentication O.K. by S64 at the time of YES, and is judged with Authentication NG by S65 at the time of NO.

[0059] - In the case of TYPE=01, it distinguishes in free service ***** by S66, is judged with Authentication O.K. by S67 at the time of YES, and is judged with Authentication NG by S68 at the time of NO.

[0060] - In TYPE=BS, it is judged with Authentication O.K. by S69.

- In TYPE=PUB, it is judged with Authentication O.K. by S70.

Drawing 8 shows the example of a URL/html document of this invention.

[0061] (a) of drawing 8 shows the example of URL. Here, in URL, a http://www.fujitsu.co.jphtml document embeds -HREF:URL data of illustration into the html document concerned.

[0062] (b) of drawing 8 shows the example of URL (session ID addition). Here, URL (session ID addition) is that (what was embedded at invisibility) to which the http://www.fujitsu.co.jp?END=yymmddhhmmssxxxhtml document embedded -HREF:URL (session ID) data of illustration into the html document concerned. Since it will be displayed clearly that this URL (session ID addition) is sent out to a browser 22 as it is and Session ID can be seen, with this, there is no delivery in a browser 22.

[0063] (c) of drawing 8 shows the example of URL (cgi addition). Here, URL (cgi addition) is that (what was embedded at invisibility) to which the http://www.fujitsu.co.jp/xxxx.cgihtml document embedded -HREF:URL (session ID) data of illustration into the html document concerned. Even if it sends out this URL (cgi addition) to a browser 22, it is " clearly... It becomes possible not to display [that xxxx.cgi" is only displayed and] Session ID "yymmddhhmmssxxx" clearly, and to hold secretly.

[Translation done.]

*** NOTICES ***

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. **** shows the word which can not be translated.
3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] A host is notified of the HTML document received from the browser. And it sets to the network system equipped with two or more WWW servers which transmit to a browser the HTML document which embedded the session ID which embedded the session ID which received the notice from the host in the HTML document, and received the notice in the browser from transmission or the host. The above-mentioned host analyzes the HTML document from the browser notified from the above-mentioned one of two or more WWW servers. When Session ID is not added, the input request of user information is transmitted to a browser through the above-mentioned WWW server. While transmitting the HTML document which generated the session ID of a meaning to the demand to which the transmitted user information was analyzed and registration was permitted, and Session ID embedded through the WWW server again to a browser. The two or more WWW server cooperation system characterized by managing effective-time information and allowing authentication at the time of within the limits of effective-time information.

[Claim 2] The two or more WWW server cooperation system according to claim 1 characterized by having embedded Session ID on the HTML document so that it might not display on URL, and making Session ID into invisibility when embedding the above-mentioned session ID in a HTML document.

[Claim 3] The claim 1 characterized by providing the following, or a two or more WWW server cooperation system according to claim 2. The call function which calls a cooperation demon into the demon who transmits and receives a HTML document between browsers to the above-mentioned WWW server. The cooperation demon who transmits to a browser the HTML document which embedded the session ID which embedded the session ID which received a notice and a host to the notice for the HTML document received from the browser when called from this call function at the host in the HTML document, and received the notice in the browser from transmission or the host.

[Claim 4] The two or more WWW server cooperation system according to claim 3 characterized by having the ***** library which performs processing which received the request in the above-mentioned WWW server from the above-mentioned cooperation demon.

[Claim 5] The claim 1 characterized by having matched with the above-mentioned user information and setting up an authentication effective time as the above-mentioned effective-time information, or one of two or more WWW server cooperation systems according to claim 4.

[Claim 6] The claim 3 characterized by setting up the existence of authentication for every directory which packed every HTML document and two or more HTML documents on the above-mentioned WWW server, and the above-mentioned call function calling the above-mentioned cooperation demon only at the time of *****, or one of two or more WWW server cooperation systems according to claim 5.

[Claim 7] The record medium which stored the program which operates on the WWW server which transmits to a browser the HTML document which embedded the session ID which embedded the session ID which received a notice and a host to the notice for the HTML document received from the browser at the host in the HTML document, and received the notice in the browser from transmission or the host.

[Claim 8] The HTML document from the browser notified from one of two or more WWW servers is analyzed. When Session ID is not added, the input request of user information is transmitted to a browser through a WWW server. While transmitting the HTML document which generated the session ID of a meaning to the demand to which the transmitted user information was analyzed and registration was permitted, and Session ID embedded through the WWW server again to a browser. The record medium which stored the program which operates on the host who manages effective-time information and allows authentication at the time of within the limits of effective-time information.

[Translation done.]